

## REMARKS

Reconsideration of this application is respectfully requested.

In office action dated August 28, 2007, Examiner first objected to the drawings under 37 C.F.R. 1.83(a) for failure to include claimed features.

Applicants, in response, hereby amend the Fig. 5 to add additional steps 506, 508 and 510 as claimed. Respectfully, the added steps to Fig. 5 do not constitute new matter as full support for these changes can be found in Claims 6 and 10, and in the specification at page 10, lines 9-11 and page 11, lines 18-27. The Examiner is requested to remove this objection to the drawings.

The Examiner then proceeded to reject claims 13-17 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. Examiner also rejects claims 1, 2, 4, 5, 7-9, and 11-16 under 35 U.S.C. § 103(a) as being unpatentable over Mennie (US 6721442 B1) in view of Lee (US 6786954 B1) and Voellmer (US 6439395 B1). Examiner rejects claims 6, 10, 17, and 18 under Mennie in view of Lee and Voellmer and in further view of Alattar (US 2002/0126873 A1).

Claims 13, 15, 17 and 18, are hereby canceled without prejudice. However, with respect to the 35 U.S.C. § 112, first paragraph rejection, applicants respectfully disagree as to Claims 14 and 16 as these claims recite statutory subject matter and are in proper *Beauregard* form, (see *In Re Beauregard* 53 F.3d 1583 (Fed. Cir. 1995)) with full support found in the specification describing computer program products (see pg. 14 of the originally specification). The Examiner is thus respectfully requested to withdraw the rejection of Claims 14 and 16 under 35 U.S.C. § 112.

The examiner cites to Mennie, Lee and Voellmer in rejecting the claims of the present application. The present invention is distinct from Mennie whether taken alone or in combination with Lee and Voellmer. Applicant will show that the present invention is patentably distinct from each cited reference individually and in combination.

A “gamut” is a subset of all colors.<sup>1</sup> “Gamut” has a specific meaning in the art of printing. In printing, “gamut” refers to the range of colors a particular device is capable of producing. Any color outside of that range is an “out-of-gamut” color.<sup>2</sup>

While it may appear to the Examiner that Mennie and the present invention teach similar techniques, those techniques are well known. Thus, while the Examiner cites to “learn mode” in Mennie Fig. 1 step 2114 as if it were a unique feature, this assertion is incorrect because those familiar with the art of image recognition know a device must be “taught” or shown an image in order to recognize subsequent presentations of that image. This is also true of devices without a “learn mode” because in those devices the pattern to be recognized is embedded within the device itself. The present invention teaches the use of pattern recognition with regard to the **placement of** out-of-gamut colors. Therefore, the present invention is patentably distinct from Mennie in this regard.

The Examiner correctly pointed out: Mennie does not teach out-of-gamut color recognition for counterfeit detection as an ingredient to the recognition and sorting process. However, Examiner incorrectly asserts that Mennie in view of Lee is obvious.

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<sup>1</sup> See “Gamut” at <http://en.wikipedia.org/wiki/Gamut>, (last visited 11/28/2007)

<sup>2</sup> *Id.*

Examiner cites to Lee at Col. 1, lines 15-19, Col. 17, lines 62-67, and col. 18, lines 1-4 as if it covered every form of anti-counterfeiting means applied to a document. Applicant does not dispute Lee addresses anti-counterfeiting measures. Applicant submits that the methods employed in the present invention to discourage counterfeiting are entirely different to those in Lee when combined with Mennie and and/or Voellmer, and thus are patentably distinct.

Lee is directed to a method of *placing* ink on paper in order to make counterfeiting difficult (Lee at Col. 22, Lines 22,23). Lee teaches anti-counterfeiting by applying multiple layers of ink to the same location. Further, reliance is made upon the fact that using standard inks result in a difficult to reverse-engineer color application, requiring a difficult problem in analytical and combinatorial chemistry (Col. 10, 51-45 of Lee).

Examiner asserts that Lee creates out-of-gamut colors. This is incorrect. Lee requires special metachromatic inks that vary in color depending upon the chemical environment, or inks that chemically react to one another (Col. 11, Lines 53-67 of Lee). The use of a combination of inks as taught in Lee does not translate to out-of-gamut colors. By definition, Lee's printed colors are within the gamut of colors capable of being printed by the printer used to apply the inks. Where two or more inks are applied to a single location, Lee teaches identification by means of detecting a spectral response differing from that of the mixed colors applied at the same time (Col 22, Lines 39-44). Lee teaches the use of a standard printer and does not require special inks (Col 7, lines 51-59). The resulting printed colors are *within* the gamut of the inkjet printer since no special ink is required to implement the teachings of Lee. In essence, Lee is making use the chemical reaction that occurs when two or more inks are applied to the same location. This method cannot be said to produce out-of-gamut colors because a

printer created the color using standard ink and can thus be reproduced by a casual counterfeiter using readily available equipment.

The present invention detects the position of out-of-gamut colors to deter counterfeiting. Lee does not create or detect out-of-gamut colors. Mennie teaches grouping of documents based on pattern recognition but does not teach the grouping of counterfeit and authentic documents. Therefore, it cannot be said that Mennie in view of Lee teaches the grouping of documents based upon the presence and location of an out-of-gamut color mark.

Examiner cites to the combination of Voellmer, Lee and Mennie as teaching an apparatus that places a document into an “accept” or “counterfeit” bin based on color. Since Lee and Mennie have already been disposed of as a viable argument against patentability, this leaves only Voellmer. The Examiner correctly cites to Voellmer at Col. 2 Line 10 as teaching the sorting of documents into “accept” and “reject” bins. However, the rest of the sentence beginning at Col. 2, Line 10 of Voellmer reads: “...the invention has a separate output pocket provided between the *test device* and the ...conveying device” (emphasis added) (Col. 2, Lines 13-15). Voellmer only mentions a *test device* but does not specify the nature of the *test device* nor make any claims pertaining to it. That is, Voellmer does not teach a means of testing for counterfeit documents. Voellmer teaches the sorting of bank notes (Col.1 Lines 7-9). In particular, Voellmer is directed at solving the problem of creating a compact bank note sorting device to permit the use of cost effective test devices (Col.1 lines 39-43). Further, Voellmer does not teach a means of document recognition based upon the input of an authentic document.

The present invention defines a *test device* that recognizes (1) out-of-gamut marks (2) on documents and (3) sorts them accordingly. Therefore, the present invention is patentably

distinct from Voellmer because Voellmer does not teach a method for recognizing counterfeit documents based on **out-of-gamut** color mark recognition.

Examiner rejects claim 3 under Ligas in light of Mennie as being obvious. This argument is similar to that of Lee in light of Mennie. Ligas teaches the use of photochromic compounds that undergo reversible color change (Ligas at Col. 3 Lines 22-23). A reversible color change as taught by Ligas does not teach the use out-of-gamut colors. Therefore, Ligas in light of Mennie cannot be said to sort documents based on the whether an out-of-gamut color is present.

Examiner rejects claim 6 under Mennie in view of Lee and Voellmer and in further view of Alattar. Alattar alone will be addressed here since Mennie, Lee and Voellmer have already been discussed. Alattar does not apply to the present invention because Alattar explicitly rejects out-of-gamut colors. Particularly, Alattar is directed to steganography (§ 0002), which “is the art and science of writing hidden messages in such a way that no one apart from the sender and intended recipient even realizes there is a hidden message.”<sup>3</sup> The present invention hides nothing; rather it relies on the use of out-of-gamut colors. Alattar teaches that out-of-gamut colors **cannot be used** for steganography (Alattar at § 0007). It is impossible to combine the present invention with Alattar in any meaningful way because Alattar rejects the use of out-of-gamut colors. Thus, the present invention is patentably distinct from Alattar as combined with any existing art.


In view of the foregoing remarks herein, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be

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<sup>3</sup> See “Steganography” at <http://en.wikipedia.org/wiki/Steganography> (last visited 11/28/2007)

allowed and a Notice of Allowance be issued. If the Examiner believes that a telephone conference with the applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

  
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